

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method of stimulating osteoblast differentiation and bone formation in an individual, comprising the step of:

over-expressing in osteoblast precursor cells Smad1 which mediates signaling of bone morphogenetic protein (BMP), wherein said Smad1 interacts with Hoxc-8 protein and inhibits the binding of said Hoxc-8 protein to a BMP-responsive gene encoding a bone matrix protein, thereby stimulating osteoblast differentiation and bone formation. ~~inducing an interaction between Smad1 and a homeobox-containing transcription factor, wherein said interaction induces a BMP-responsive gene encoding a bone matrix protein which produces osteoblast and/or chondroblast differentiation thereby stimulating bone formation.~~

2-3. (canceled)

4. (currently amended) The method of claim 1, wherein said BMP-responsive gene is ~~selected from the group consisting of osteopontin, sialoprotein, osteonectin, and osteocalcin.~~

5. (original) The method of claim 1, wherein said individual is osteopenic.

6-17. (canceled)